



# SiC Schottky Barrier Diode

SN0608G4

$V_{RRM} = 650\text{ V}$

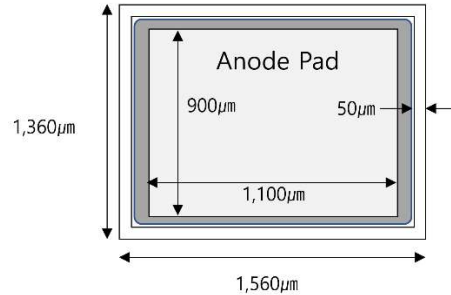
$I_F(T_C=150^\circ\text{C}) = 8\text{ A}$

$Q_C = 21\text{ nC}$

## Features

- Silicon Carbide Schottky Barrier Diode
- Small Die Size
- Low  $I_R$
- High-Recovery Speed

## Die Structure & Pattern Diagram



## Applications

- Switch Mode Power Supplies
- Power Factor Correction
- Secondary Side Rectification
- PV Power Conditioners

## Chip Information

Wafer size	6 inch
Chip size	1,360 * 1,560 µm
Chip thickness	350 µm
Scribe line width	100 µm
Pad diameter	900 * 1,100 µm
Top metallization	AlCu(Cu 0.5%) for Wire
Back metallization	Ti-Ni-Ag (for Solder)
Chip quantity	6,954 pcs/wafer

## Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Conditions	Limit	Unit
Repetitive peak reverse voltage	$V_{RM}$		650	V
Reverse voltage (DC)	$V_R$		650	V
Forward voltage (DC)	$I_F$		8	A
Peak surge forward current	$I_{FSM}$	10 ms Sinusoidal	65	A
Junction temperature	$T_j$		175	°C
Storage temperature	$T_{stg}$		-55 to +175	°C

## Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
DC blocking voltage	$V_{DC}$	$I_R = 30\ \mu\text{A}$	650	-	-	V
Forward voltage	$V_F$	$I_F = 8\text{ A}, T_a = 25^\circ\text{C}$	-	1.33	1.70	V
		$I_F = 8\text{ A}, T_a = 150^\circ\text{C}$	-	1.60	-	V
		$I_F = 8\text{ A}, T_a = 175^\circ\text{C}$	-	1.70	-	V
Reverse current	$I_R$	$V_R = 650\text{ V}, T_a = 25^\circ\text{C}$	-	0.3	40	µA
		$V_R = 650\text{ V}, T_a = 150^\circ\text{C}$	-	3	-	µA
		$V_R = 650\text{ V}, T_a = 175^\circ\text{C}$	-	7	-	µA
Total capacitance	$C$	$V_R = 1\text{ V}, f = 1\text{ MHz}$	-	272	-	pF
Total capacitive charge	$Q_C$	$V_R = 400\text{ V}, di/dt = 350\text{ A}/\mu\text{s}$	-	21	-	nC
Switching time	$T_C$	$V_R = 400\text{ V}, di/dt = 350\text{ A}/\mu\text{s}$	-	15	-	ns



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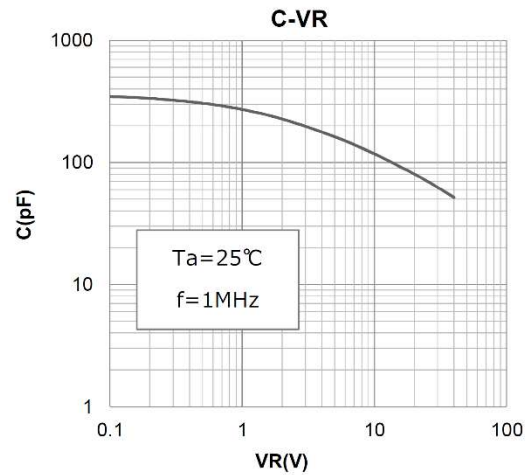
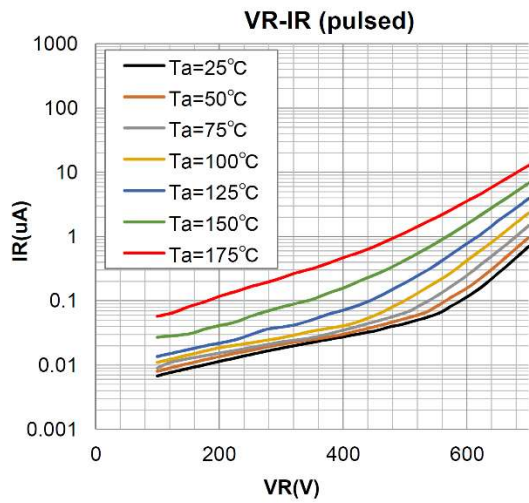
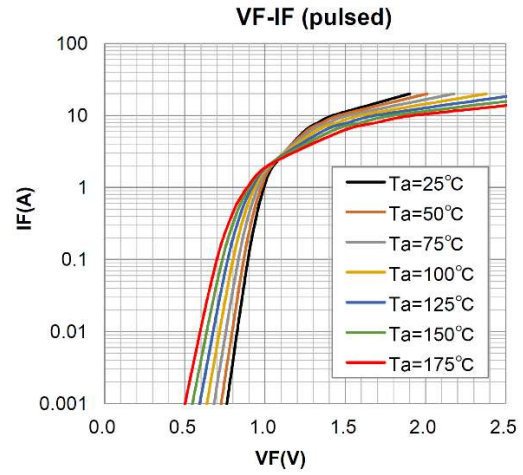
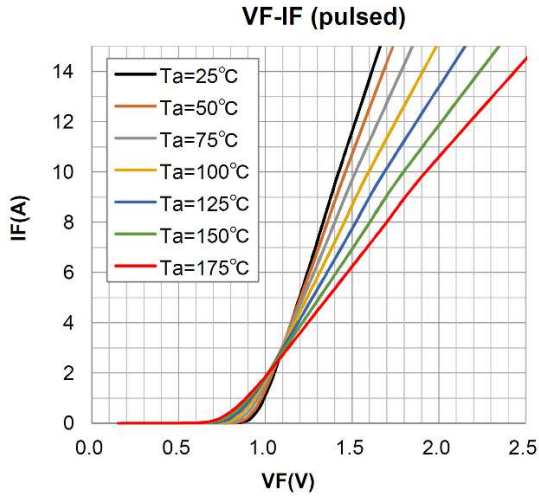
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## Electrical characteristic curves





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## Notes

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